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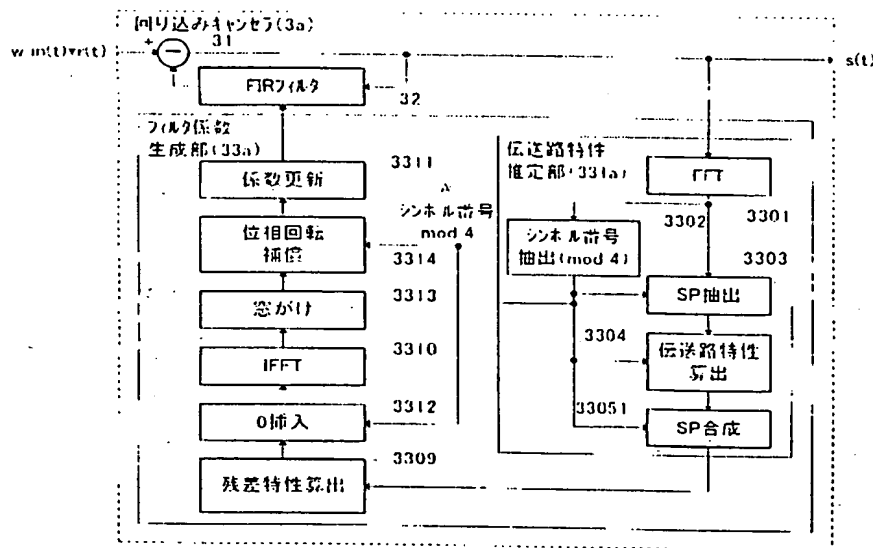
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- (51) 国際特許分類: H04B 7/015, 7/15, H04J 11/00 (72) 発明者: および
(21) 国際出願番号: PCT/JP2003/012751 (75) 発明者/出願人 (米国についてのみ): 國枝 賢徳
(22) 国際出願日: 2003年10月6日 (06.10.2003) (KUNIEDA, Yoshinori) [JP/JP]; 〒228-0803 神奈川県
(25) 国際出願の言語: 日本語 相模原市 相模大野 5-10-20-405 Kanagawa (JP). 四方
(26) 国際公開の言語: 日本語 英邦 (YOMO, Hidekuni) [JP/JP]; 〒216-0015 神奈川県
(30) 優先権データ: 川崎市 宮前区 菅生 3-33-17-221 Kanagawa (JP). 河
特願 2002-299523 合 慶士 (KAWAI, Yoshihito) [JP/JP]; 〒216-0015 神奈
2002年10月11日 (11.10.2002) JP 川県 川崎市 宮前区 菅生 3-33-17-320 Kanagawa (JP).
特願 2003-343412 2003年10月1日 (01.10.2003) JP 林 健一郎 (HAYASHI, Kenichiro) [JP/JP]; 〒610-0341
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/ 続葉有 /

(54) Title: WRAPAROUND CANCELLER, RELAY SYSTEM, AND WRAPAROUND CANCELING METHOD

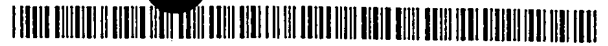
(54) 発明の名称: 回り込みキャンセラ、中継システム及び回り込みキャンセル方法



3a WRAPAROUND CANCELLER
32 FIR FILTER
33a FILTER COEFFICIENT GENERATION SECTION
3311 COEFFICIENT UPDATE
3314 PHASE ROTATION COMPENSATION
3313 WINDOWING
3312 O INSERT
3309 RESIDUAL CHARACTERISTIC CALCULATION
A SYMBOL NUMBER mod 4
331a TRANSMISSION PATH CHARACTERISTIC ESTIMATION SECTION
3302 SYMBOL NUMBER EXTRACTION (mod 4)
3303... SP EXTRACTION
3304 TRANSMISSION PATH CHARACTERISTIC CALCULATION
3305... SP SYNTHESIS

(57) Abstract: A wraparound canceller capable of performing adaptive operation to follow a wraparound wave, a parent station wave phase, and temporal level fluctuation at a high speed and with a high accuracy as well as reducing the device size. By limiting the number of data items of the transmission path characteristic estimation section and performing the extension to the entire band by 0 insert at the frequency region and windowing after the time region conversion instead of performing interpolation, the speed of adaptive operation of the wraparound canceller is increased because of the reduction in the number of processing data items. Accordingly, it is possible to realize a high capability to follow the wraparound wave, parent station wave phase, and the temporal level fluctuation and the internal processing becomes more accurate. Consequently, a highly accurate canceling operation can be performed and the circuit size is reduced, thereby realizing the reduced size of the device as a beneficial effect.

/ 続葉有 /



(81) 指定国 (国内): AE, AG, AI, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PE, RO, SE, SI, SK, TR),
OAPI 特許 (BE, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

添付公開書類:

— 国際調査報告書

(84) 指定国 (広域): ARIPO 特許 (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許

2 文字コード及び他の略語については、定期発行される各 PCT ガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(57) 要約: 回り込み波や親局波の位相やレベルの時間変動に追従する適応動作を高速、高精度に行うことと、装置を小型にする回り込みキャンセラ。伝送路特性推定部のデータ点数を限定し、帯域全体への拡張を補間によらず周波数領域での 0 挿入と時間領域変換後の窓がけによって行うことによって、処理データ点数の減少で回り込みキャンセラの適応動作が高速になるため、回り込み波や親局波の位相やレベルの時間変動に対する高い追従性を実現し、内部での処理がより高精度になるため、高精度なキャンセル動作を行い、回路規模が小さくなるため、装置の小型を実現するという有利な効果が得られる。

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/12751

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ H04B7/015, H04B7/15, H04J11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ H04B1/00, H04B3/00, H04B7/00, H04J11/00-13/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Keisuke HASUMI, Koichiro IMAMURA, Naohiko ISO, Kazuhiko SHIBUYA, "Chijo Digital Hoson SFN no tameno Hosoha Chuokeiyo Mawarikomi Cancellor no Kento", The Institute of Electronics, Information and Communication Engineers Gijutsu Kenkyu Hokoku, Vol.98, No.661, 16 March, 1999 (16.03.99), pages 49 to 56 (EMCU 98-111)	1-11
A	JP 2001-223663 A (Matsushita Electric Industrial Co., Ltd.), 17 August, 2001 (17.08.01), (family: none)	1-11
A	JP 11-163771 A (Samsung Electronics Co., Ltd.), 18 June, 1999 (18.06.99), & EP 903898 A2 & CN 1209001 A & KR 99015930 A	1-11

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
26 December, 2003 (26.12.03)

Date of mailing of the international search report
20 January, 2004 (20.01.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/12751

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 11-355160 A (Nippon Hoso Kyokai), 24 December, 1999 (24.12.99), & WO 99/65173 A1 & EP 1087559 A1 & CN 1308798 A & TW 439354 A & KR 2001071441 A	1-11